

What is claimed is:

1. An apparatus for transporting and weighing articles of mixed sizes comprising:
a base;
a forward driving mechanism having a center of gravity and connected to said base for contacting an article along a first surface and transporting said article along a transport path;
a weighing mechanism connected to said base and said forward driving mechanism and configured to calculate the weight of said article as said article is moved along said transport path; and
at least one guide connected to said base and configured to contact said article along a second surface to guide said article along said transport path.
2. An apparatus of claim 1, wherein said forward driving mechanism is oriented substantially parallel to said base.
3. An apparatus of claim 2, wherein said forward driving mechanism comprises a transport belt supported by a drive pulley and an idler pulley, said transport belt mechanized by a motor.
4. An apparatus of claim 1, wherein said at least one guide comprises a plurality of support baffles.
5. An apparatus of claim 4, wherein said plurality of support baffles are oriented perpendicular to said forward driving mechanism.

6. An apparatus of claim 1, wherein said weighing mechanism comprises at least one load cell.

7. An apparatus of claim 6, wherein said at least one load cell is a single load cell having a weighing surface, said weighing surface is centered below said center of gravity of said forward driving mechanism.

8. An apparatus of claim 6, wherein said at least one load cell comprises a first load cell and a second load cell located at opposite ends of said forward driving mechanism.

9. An apparatus for transporting and weighing articles of mixed sizes comprising:
a base;
a forward driving mechanism having a center of gravity connected to said base for contacting an article along a first surface and transporting said article along a transport path;
a weighing mechanism connected to said base and said forward driving mechanism and said weighing mechanism configured to calculate the weight of said article as said article is moved along said transport path; and
at least one guide connected to said weighing mechanism and configured to contact said article along a second surface to guide said article along said transport path.

10. An apparatus of claim 9, wherein said forward driving mechanism is oriented substantially parallel to said base.

11. An apparatus of claim 10, wherein said forward driving mechanism comprises a transport belt supported by a drive pulley and an idler pulley, said transport belt mechanized by a motor.

12. An apparatus of claim 9, wherein said at least one guide comprises a plurality of support baffles.

13. An apparatus of claim 12, wherein said plurality of support baffles are oriented perpendicular to said forward driving mechanism.

14. An apparatus of claim 9, wherein said weighing mechanism comprises at least one load cell.

15. An apparatus of claim 14, wherein said at least one load cell is a single load cell having a weighing surface and said weighing surface is centered below said center of gravity of said forward driving mechanism.

16. An apparatus of claim 9, wherein said at least one load cell comprises a first load cell and a second load cell located at opposite ends of said forward driving mechanism.

17. An apparatus for transporting and weighing articles of mixed sizes comprising:
a base;
a forward driving mechanism having a center of gravity connected to said base and for contacting an article along a first surface and transporting said article along a transport path;

a weighing mechanism connected to said base and said forward driving mechanism, and said weighing mechanism configured to calculate the weight of said article as said article is moved along said transport path;

at least one guide bracket connected to said base; and

at least one guide connected to said at least one guide bracket and configured to contact said article along a second surface to guide said article along said transport path.

18. An apparatus of claim 17, wherein said forward driving mechanism is oriented substantially parallel to said base.

19. An apparatus of claim 18, wherein said forward driving mechanism comprises a transport belt supported by a drive pulley and an idler pulley, said transport belt mechanized by a motor.

20. An apparatus of claim 17, wherein said at least one guide comprises a plurality of support baffles.

21. An apparatus of claim 20, wherein said plurality of support baffles are oriented perpendicular to said forward driving mechanism.

22. An apparatus of claim 17, wherein said weighing mechanism comprises at least one load cell.

23. An apparatus of claim 22, wherein said at least one load cell is a single load cell having a weighing surface, said weighing surface is centered below said center of gravity of said forward driving mechanism.

24. An apparatus of claim 20, wherein said at least one load cell comprises a first load cell and a second load cell located at opposite ends of said forward driving mechanism.

25. An apparatus for transporting and weighing mailpieces of mixed sizes comprising:

a base;

a transport belt having a center of gravity supported by a drive pulley and an idler pulley and mechanized by a motor for contacting a mailpiece having a bottom edge and transporting said mailpiece along a transport path and said transport belt oriented parallel to said base; and

at least one load cell connected to said base and said transport belt configured to calculate the weight of said mailpiece as said mailpiece is continuously transported along said transport path.

26. An apparatus of claim 25 further comprising a plurality of support baffles connected to said base and contacting said mailpiece to guide said mailpiece along said transport path.

27. An apparatus of claim 25 further comprising a plurality of support baffle brackets connected to said base.

28. An apparatus of claim 27 further comprising a plurality of support baffles connected to said support baffle brackets and contacting said mailpiece to guide said mailpiece along said transport belt.

29. An apparatus of claim 26, wherein said at least one load cell is a single load cell having a weighing surface and said weighing surface centered under said center of gravity of said transport belt.

30. An apparatus of claim 29, wherein said single load cell produces a signal transmitted to a mail processing controller.

31. An apparatus of claim 26, wherein said at least one load cell comprises a first load cell and a second load cell connected to said transport belt at opposite ends.

32. An apparatus of claim 31, wherein said first load cell and second load cell produce signals transmitted to a signal converter electrically connected to a mail processing controller.

33. An apparatus of claim 32, wherein said signal converter is a trim balance circuit.

34. An apparatus for transporting and weighing mailpieces of mixed sizes comprising:

a base;

a structural pillar having a top surface and a back surface and said structural pillar connected to said base;

a support plate having a front side, a back side, and a bottom edge, and said back side connected to said back surface of said structural pillar and said support plate oriented in perpendicular to said base;

a forward driving mechanism having a center of gravity connected to said support plate and for contacting a mailpiece having a bottom edge and a side facing forward driving mechanism, said forward driving mechanism for transporting said mailpiece along a transport path;

a transport guide connected to said bottom edge of support plate;

a normal force component connected to said transport guide for keeping said mailpieces in contact with forward driving mechanism; and

a single load cell having a weighing surface connected to said top surface of said structural pillar and said back side of said support plate and configured to calculate the weight of said mailpiece as said mailpiece is continuously transported along said transport path.

35. An apparatus of claim 34, wherein said structural pillar suspends the entire mail weighing apparatus except for said base in the air.

36. An apparatus of claim 34, wherein said forward driving mechanism comprises a plurality of transport belts supported by a drive pulley and an idler pulley, mechanized by a pulley.

37. An apparatus of claim 34, wherein said normal force component comprises a plurality of springs connected to said transport guide.

38. A method for weighing articles while in motion in a transport system having a system controller comprising:

receiving an article in the transport system;

moving said article along a horizontal transport path coupled to a weighing mechanism;

supporting said moving article in said horizontal transport path with a guide;

generating a signal corresponding to a weight of said moving article when said moving article reaches said weighing mechanism on said horizontal transport path; and

transmitting said analog signal to said system controller.

39. A method according to claim 38, wherein said transport system is a mailpiece weighing system.

40. A method according to claim 39, wherein said moving article is a moving mailpiece.

41. A method according to claim 40, further comprising:
comparing said weight of said moving mailpiece to a postal weight break to determine if said postal weight break is within the margin of error of said weighing mechanism;
stopping transport of said moving mailpiece if said postal weight break is within the margin of error of said weighing mechanism; and
reweighing said moving mailpiece if said postal weight break is within the margin of error of said weighing mechanism.

42. A method according to claim 41, wherein said weighing mechanism is a single load cell.

43. A method according to claim 41, wherein said weighing mechanism comprises a first load cell and a second load cell.

44. A method according to claim 41, wherein said guide is a plurality of support baffles.

45. A method for weighing articles while in motion in a transport system having a system controller comprising:

receiving an article in the transport system;
moving said article along a horizontal transport path coupled to a weighing mechanism;
supporting said moving article in said horizontal transport path with a guide;

generating a signal corresponding to a weight of said moving article when said moving article reaches said weighing mechanism on said horizontal transport path; and transmitting said signal to said system controller.

46. A method according to claim 45, wherein said transport system is a mailpiece weighing system.

47. A method according to claim 46, wherein said moving article is a moving mailpiece.

48. A method according to claim 47 further comprising:
comparing said weight of said moving mailpiece to a postal weight break to determine if said postal weight break is within the margin of error of said weighing mechanism;
stopping transport of said moving mailpiece if said postal weight break is within the margin of error of said weighing mechanism; and
reweighing said moving mailpiece if said postal weight break is within the margin of error of said weighing mechanism.

49. A method according to claim 48 wherein said weighing mechanism is a single load cell.

50. A method according to claim 48 wherein said weighing mechanism comprises a first load cell and a second load cell.

51. A method according to claim 48 wherein said guide is a plurality of support baffles.